Re: Hydrogen Production Method Could Bolster Fuel Supplies

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From: Bill Ward (*bwardREMOVE_at_ix.netcom.com*)
Date: 12/09/04

Date: Thu, 09 Dec 2004 02:33:48 GMT

On Wed, 08 Dec 2004 22:27:44 −0800, Roland PJ
<roland@rolandpj.com> wrote:

>Bill Ward wrote:
>> On 7 Dec 2004 02:53:26 −0800, alexterrell@yahoo.com wrote:
>>
>>
>>>Yes, being hit by a one ton battery would not be nice. Luckily, plug in
>>>hybrids will only need about 100kg of batteries, with an energy density
>>>much lower than that of gasoline. Indeed, even with the equivelant
>>>range, batteries need about 20% of the energy contrent of fuel.
>>
>>
>> Alex, could you tell me how you come to that conclusion?
>> Are you assuming that ICE only get 20% efficiency?
>
>Bill, that is exactly his assumption. Note that that's efficiency to
>wheel. It's conservative in the commuter cycle, but liberal on the open
>road.
>
>Roland

My concern is not so much efficiency, Roland, but more about how to guarantee the stored battery energy won't be catastrophically released, I originally responded to a post mentioning a potential 500mi battery range.

My Civic gets (all figures very rough estimates) about 30MPG, so in 500 miles would burn about 120 lbs of fuel.

Also consumed will be around 380 lbs of oxygen, making roughly 500 lbs of total reactants.

Being in a generous mood, lets say the EV is 5 times more efficient as my ICE. That means it must consume about 100 lbs of fuel and oxidizer combined. The key word is

"combined", as a battery must store fuel and oxidizer in close proximity, as opposed to liquid fuels stored in a tank, not mixed with oxygen.

Now in a crash, liquid fuel tanks may rupture, and a fire may occur, but an explosion is limited by the oxygen supply.

Batteries, on the other hand, have both reactants ready to go, and if the energy density is high enough, may explode. Think of a 100 lb pipe bomb.

So far, energy densities have been low enough not to cause explosions, but 500 mi batteries might. ..

Ford had some serious battery fires in their NaS vans a few years ago, and they got nowhere near 500 mi range.

I would need some pretty effective convincing before I would ride in a battery EV with 500 mi range.

Regards,

Bill Ward